

Claims 1-3 and 6-8 are rejected under 35 U.S.C. § 103(a) as purportedly obvious based on Sano (U.S. Pat. No. 5,863,694) in view of Kumashiro (U.S. Pat. No. 5,176,978). Applicants again respectfully traverse and make the following additional remarks.

Sano gives a conditional formula prescribing the relationship between the average toner diameter and the proportion of toner particles of 5 μ m or less, for the purpose of obtaining satisfactory charge stability with a toner, and for other purposes. In contrast, the present invention prescribes the proportion of toner particles of 5 μ m or less for the purpose of obtaining a grinding effect. Thus, these inventions are essentially different from each other in their aims and features.

While Sano discloses, in Table 1, examples in which the percentage by volume of toner particles of 5 μ m or less is 2.0% and 2.3%, respectively (Examples 1 and 2), Applicants respectfully submit that it is simply a coincidence that the proportion of toner particles of 5 μ m or less, as observed in Sano's Examples 1 and 2, is within the range prescribed in the present invention. This will be understood from the fact that, as the same Table 1 of Sano '694 shows, the proportion of toner particles of 5 μ m or less as observed in Examples 4, 5, and 6 is 0, 40.2, and 23.8% by volume, respectively, thus far out of the range prescribed in the present invention.

Moreover, Applicants point out what Sano actually prescribes is not the particle percentage by volume of toner but the percentage by number of particles of toner particles of 5 μ m or less. In other words, Sano prescribes the relationship between the percentage by number of particles of toner particles of 5 μ m or less and the volume-average particle diameter of the toner. Applicants caution that even with the same toner, the value of the content of toner particles of 5 μ m or less differs greatly, depending on whether the value is given in percent by number of particles or in percent by volume. This will be clearly understood from Sano's Table 1. As Applicants clarify above, it is merely coincidental

that, in Table 1, percentages by volume are given along with percentages by number of particles. In view of the mere coincidence, Sano can not teach or suggest, to those of ordinary skill in the art, any nexus between the percentage by volume of toner particles of 5 μ m or less, and the grinding effect obtained.

In the Office Action, it is concluded that the toners of Examples 1 and 2 of Sano do not cause “filming” on the photoconductor. This conclusion is based on the teaching of good cleanability after 10,000 runs of printing (page 11, lines 1 to 10). Applicants fear that this conclusion, however, is incorrect because it is based upon a misunderstanding. Cleanability is concerned with whether or not toner particles that have escaped the cleaning blade are present on the surface of the photoconductor, after the photoconductor has passed the cleaning blade (column 10, lines 61 to 65). By contrast, filming (according to Applicants) is concerned with whether or not a thin film of any ingredient of the toner, such as wax or binder resin, is deposited on the surface of the photoconductor. That is, filming and cleanability are very different properties. Accordingly, it can well happen that, even though filming is occurring in the form of a very thin film, good cleanability still results. Thus, Applicants courteously urge that it is not possible to judge that no filming is occurring simply because cleanability is good.

Now turning to Kumashiro, Kumashiro discloses that a preferred diameter of dispersed wax particles is from 0.1 to 1.5 μ m. However, Kumashiro neither teaches nor fairly suggests anything about the percentage by volume of toner particles of 5 μ m or less or about the effects of such toner particles. Hence, there is no motivation provided in either document to combine the teachings of the document as asserted in the Office Action.

The present invention has been devised on the basis of Applicants’ discovery that toner particles of 5 μ m or less exert a grinding effect. According to the present invention, by prescribing the diameter of dispersed wax particles within a predetermined range, it is

possible to prevent phenomena known as hot offsetting and filming. In addition, by prescribing the percentage by volume of toner particles of 5 μ m or less within a predetermined range, it is possible to grind, at an early stage, toner components that have attached to a photoconductor and thereby completely prevent filming.

Therefore, Applicants respectfully urge that the teachings of Sano and Kumashiro, which do not disclose or suggest anything about the relationship between the percentage by volume of toner particles of 5 μ m or less and their grinding effect would not lead those of ordinary skill in the art to the claimed invention. Withdrawal of the rejection is thus respectfully requested.

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Claims 1-6 and 8 are rejected under 35 U.S.C. § 103(a) as purportedly obvious based on Asada (U.S. Pat. No. 5,976,754) in view of Sano.

Claim 7 is rejected under 35 U.S.C. § 103(a) as purportedly obvious based on Asada in view of Sano, and further in view of additional teachings of Asada.

These two rejections are addressed together as similar issues apply to both. Applicants respectfully traverse both rejections.

As stated in the Office Action, Asada discloses a toner containing a compatibilizing agent for compatibilizing a binder resin and a releasant wherein the diameter of dispersed wax particles ranges from 0.2 to 1.5 μ m. However, as with Kumashiro, Applicants point out that Asada does not describe or fairly suggest the claimed percentage by volume of toner particles of 5 μ m or less or their grinding effect. Moreover, as discussed above, Sano does not describe or fairly suggest the relationship between the percentage by volume of toner particles of 5 μ m or less and their grinding effect. Hence, as previously stated, there is no suggestion to combine Asada or Sano, as asserted by the Office Action, only through hindsight gained from review of the Applicants' own

disclosure would those of ordinary skill in the art have been inclined to make such a combination. Therefore, withdrawal of both of these rejections also is respectfully requested.

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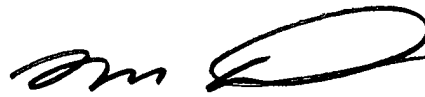
Applicants respectfully submit that this Request for Reconsideration and the above remarks obviate the outstanding rejections in this case, thereby placing the application in condition for immediate allowance. Allowance of this application is earnestly solicited.

If any fees are due in connection with the filing of this Amendment, such as fees under 37 C.F.R. §§1.16 or 1.17, please charge the fees to Deposit Account 02-4300; Order No. 032739.072.

Respectfully submitted,

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